

alone or in combination with any of the cited prior art. Accordingly, the Examiner has not established a *prima facie* case of obviousness.

Applicant's invention provides a dental apparatus comprising in relevant part a user interface which is a *touch pad*, a graphic display comprising means for showing symbols describing the functions of the dental device and a *cursor*, and *means for moving and controlling the cursor in response to a touch of a pointer means and its movement on a surface of the touch pad*. None of these claimed features are disclosed or suggested by Stoeckl or any other cited prior art.

Applicant maintains that the Examiner has misinterpreted relevant parts of the disclosure of Stoeckl.

Referring to claim 1, the Examiner points to Stoeckl column 8, lines 38-53 as teaching "symbols" describing the control functions. Applicant maintains that Stoeckl's so called "light spots" do not equate the symbols of the subject invention. The light spots do not constitute symbols which are designed to be selected, they merely indicate one at a given time the selection (or "the move") having been made "elsewhere". In other words, the light spots do not constitute means via which a function can be selected, they merely function as indication lights.

The Examiner also points to Stoeckl column 8, lines 22-24 as teaching controlling functions, i.e moving the cursor by hand. Column 8, lines 22-24 reads as follows: "The addition of such a touch screen makes it possible to also control the individual functions of the apparatus by hand." This teaching is that of a picture screen with an integrated keyboard-type interface used to control the functions manually. There is no teaching of displaying and using a cursor. Applicant points out that in this regard the picture screen cannot be both the screen and the cursor.

Referring to claims 2, 3, and 4, the Examiner alleged that the disclosure of a keyboard or soft keys necessarily disclose a computer. Applicant does not follow this logic and maintains that this disclosure does not necessitate the presence of a computer.

In addition, applicant notes that the Examiner's interpretation of the teachings regarding claims 5, 9, 11 and 12 are illogical and provide no support for the disclosure of the elements of applicant's claims.

Applicant maintains that Stoeckl discloses a typical prior art medical apparatus comprising foot-activated controllers and touch screens. Stoeckl's medical apparatus comprises two control systems: the first wherein the selection and control of operations is achieved through a visual field and foot controller, and the second comprising keys which are manually pressed on a touch screen.

Applicant notes that "touch screen" is not "touch pad". These two phrases are separate and distinct terms of art with well-known definitions. A touch screen is a device historically designed to replace mechanical keyboards and as such also uses "keys" which are pressed and correspond to specific functions. Such touch screens, in contrast to touch pads, have no cursor functionality. One skilled in the art understands a "touch screen" to be a surface on which or through which symbols much like keys of a keyboard are arranged visible, which symbols may be pressed to activate a specific operation. A touch pad, however, is a device physically separate from any screen and it enables the user to move a cursor displayed on a screen via a pointer means, so that the corresponding function is activated in response to such action, i.e. *in response to movement of a pointer means and tapping with it on a surface of the touch pad.*

Applicant's invention clearly claims a touch pad, not a touch screen as disclosed by Stoeckl. In addition to being a completely distinct feature as discussed in the above paragraph, the cursor functionality of the touch pad and the related fact than one does not necessarily have to be able to see the surface on which the pointer means is to be operated enables the user interface to be positioned separately from and freely regardless of location of the visual display. This feature enables the user to control the dental apparatus from practically anywhere in the vicinity of the apparatus as the touch pad enables the user to transmit control signals to the cursor which is movable on the display. This is obviously not possible with touch screens. A touch pad also allows more versatility than a touch screen. A touch screen is limited to its "keys" while a touch pad may be used to control many different applications using the cursor functionality. Accordingly, Stoeckl fails to disclose means for controlling the cursor in response to a touch of a pointer means and its movement on a surface of the touch pad as recited in applicant's claimed invention.

Applicant maintains that none of the cited prior art cure Stoeckl's deficiencies, as none of the cited prior art disclose such a touch pad.

In addition, one skilled in the art would not combine the teachings of any of the cited secondary references with that of Stoeckl because the limitation of Stoeckl's device is not solved by any of these teachings. Specifically, the touch screen feature of Stoeckl limits its function because the user interface must be placed in a position where the user can both see and reach the touch screen itself which is in this case the visual display. Thus, a user is limited in space to operate the dental apparatus. None of the cited secondary references teach any way to overcome this problem and thus arrive at applicant's claimed invention. There is no teaching or suggestion in any of these references, and certainly not in Stoeckl, which relate to the free placement of the touch screen, and certainly not of a touch pad.

Accordingly, applicant maintains that the combination of Stoeckl and any of Fricker, Lordo or Smith does not render the pending claims obvious as none of these references disclose a touch pad via which a cursor displayed on a screen is controlled in response to a touch of a pointer means and its movement on a surface of the touch pad as clearly recited in applicant's claims. Applicants respectfully request that the Examiner reconsider and withdraw these grounds of rejection.

At the applicant's request, a paper drawn up by the applicant discussing the same and some additional issues as those discussed above, is attached here to further point out the true differences between the cited prior art and instantly claimed invention.

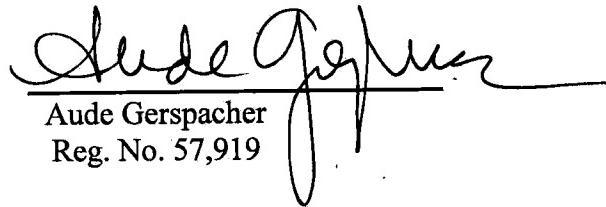
Applicant understands that the Examiner deems the subject matter of claim 7 allowable and thanks the Examiner for this assessment. However, in view of the remarks presented herein, applicant maintains that all pending claims should be deemed allowable. Should the claims herein be allowable but for a minor matter that could be the subject of either an Examiner's Amendment or a supplemental submission, applicant would appreciate the Examiner's contacting applicant's undersigned attorney.

Attorney Docket No. 250968.000
Customer No.: 54042

Reconsideration and allowance of the claims as presently amended are respectfully requested.

Respectfully submitted,

November 4, 2009


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June 18, 2009

US Appl. Nr. 10/550,240; PLA078-820711
"Touch pad"

REMARKS CONCERNING the Office Action dated May 4, 2009

Claim 1 as currently on file defines the invention as follows [underlining added]:

A dental apparatus which comprises a dental device, a graphic display and a user interface connected functionally to one another, the user interface being arranged to be used for controlling functions of the dental device, wherein
the user interface is a touch pad, and
the graphic display comprises means for showing symbols describing the control functions of the dental device and a cursor, and
the apparatus further comprises means for moving and controlling the cursor in response to a touch of a pointer means and its movement on the surface of the touch pad.

The publication US 5,300,926 cited by the Examiner corresponds to EP 455852. The word "cursor" appears in one sentence of the original, German language description of the EP 455852 publication:

Die Lichtpunkte entlang eines Astes können bei dieser Ausführung durch den Bildschirmcursor bestimmt werden, der bei Betätigung des Fußschalters in Richtung der jeweils anzuwählenden Funktion bewegt wird.

Considering this wording, and the description as a whole, one is able to see that basically two control systems are taught in this publication: One in which selection of operations and control thereof is realized by an arrangement including a "visual field" and a foot controller, and another one including this "visual field" and keys which may be manually pressed – these keys possibly in themselves forming "the visual field".

This teaching of US '926 is, however, exactly the prior art referred to in the description of the current application already: Foot switch controllers, and the so called touch screens.

NOTE! Touch screen is NOT the same term, nor is it the same device as a touch pad:

Historically, touch screens have been devices designed to replace mechanical keyboards and the like, i.e. the term "touch screen" in itself has referred to a user interfaces which "by definition" do NOT include a computer mouse functionality but "keys". US '926 clearly discusses just these types of keys (such as micro switches).

As compared to touch screens, the current invention

- makes it possible to position the user interface even to such ergonomic locations of a dental work place whereto the operator cannot see - which is not possible in the case

of a touch screen, which is a device that must be positioned such that one is able to see the screen (the symbols) - the size of a touch pad may also be arranged smaller than that of screen's, which also gives more freedom in choosing the most convenient location for the user interface

- makes possible controlling even other applications than just those for which a touch screen has been specifically designed for
- makes possible avoiding such visibility problems relating to touch screens that inevitably will be caused by wet and bloody fingers of a dentist, when one gives control commands by touching – or maybe even sliding a finger on the screen (keyboard) one should actually be able see.

Going into detailed arguments of the Office Action, starting from comments regarding claim 1 on page 2, one must first wonder how specifically col. 8 lines 37-38 of Stoeckl would teach a graphic display (which is not to say that Stoeckl as such could not be seen teaching one).

Still referring to page 2 of the Action, it is impossible to understand how the light spots (as such) could be considered being “symbols describing control functions” (Stoeckl does not teach that there would be different light spots in a given view, so how would one know what to select when all the light spots are the same, i.e. if all the symbols are identical, they cannot be symbols describing various functions).

Turning to page three then, more relevantly, col. 8 lines 22-24 teach nothing concerning moving a cursor by hand – it teaches a “picture screen” with which a keyboard-type user interface has been integrated, which may then be used for controlling functions of the apparatus manually. Such an arrangement does not involve displaying / moving a cursor, though. There is also a logical problem in Examiner’s analysis, when in one place a “picture screen cursor” is considered to correspond to a cursor, in another place the picture screen itself. (Regarding which: How could a “screen” be a “cursor”? In order for something to be regarded being a cursor, isn’t one of the necessary criteria that one should be able to change its location, i.e. move it? Does Stoeckl really teach “moving the picture screen itself”!?)

It is also difficult to follow how any “place on a view” could be considered being a “means”.

Further still, col. 10 does not discuss manual control of a picture screen, but the other embodiment of Stoeckl’s invention more extensively discussed in the publication in the first place, i.e. the one in which a foot controller is used to control the dental apparatus. Neither a foil keyboard or a touch screen constitutes means by which one can move a cursor in the way one can e.g. by a touch pad – neither of those user interfaces includes the functionality of the cursor following movement of a pointer on their surface, as they are not designed for such operation but only to comprise individual discrete areas, which function as press buttons.

Finally, the last para concerning Claim 1 seems completely unintelligible – in itself and further as one cannot understand how para “0052” of Fricker would have anything to do with motivating combination of these publications?

Then, concerning claim 2, it is yet again difficult to see any logic in the argumentation: How the presence of any kind of a keyboard or "soft keys" would necessitate existence of a computer? The same applies concerning claims 3 and 4.

Regarding the paragraph concerning claim 5, how should one understand the completely incomplete sentence ", wherein the pointer means PERIOD"? And, again, it is difficult to see how a "point in space" could constitute "pointer means".

Concerning comments on claim 8, by first reading at least one cannot see how col. 12 lines 8-23 of Lordo would even teach any film designed to be placed on a surface...

Turning to claim 9, the comment "as a keyboard is arranged to control functions of an apparatus, the keyboard must be integrated into the apparatus" simply is not true – for example, right now when writing this text a keyboard is used which lies completely alone on a desk and which is not integrated into anything, yet it is used to control a PC...

The comment regarding claim 11 is yet again incomprehensible – how would lifting a chair involve modifying control information (as such even, let alone based on patient information)?

Finally, the analysis concerning Stoeckl in reference to claim 12 is yet again missing logic: When it is written "by moving the cursor on the display to the desired control function symbol", in view of the "term analysis" made by the Examiner in this context, this would mean "by moving the picture screen cursor on the display to the desired light spot". In order for this to make any sense, Stoeckl should have taught that there are a number of light spots out of which the user may choose the desired one, but obviously this is not the case as, basically, there always is only one light spot visible at a time. The light spots do not constitute symbols which are designed to be selected, they merely indicate (one at a given time) the selection (or "the move") having been made – "elsewhere". (If anything, it would be the arrays/ lines of lamps that are lit or not according to control signals provided via the foot controller that might be considered constituting "a cursor" in Stoeckl's arrangement, but for sure the lamps do not constitute "symbols to be selected".)

More generally, one cannot see how either of the cited publications could be seen providing motivation for a skilled man to place any control device at a position whereto the dentist cannot see. For sure Stoeckl, when discussing nothing but "visual fields", gives no hints towards such a placement of a user interface, and it cannot be seen how Fricker would be doing that, either.

So, regardless what argued by the Examiner, US '926 does not teach a) a touch pad in the first place nor b) that the publication would disclose "moving and controlling the cursor in response to a touch of a pointer means and its movement on the surface of the touch pad": i) Concerning a touch screen of US '926, there is no discussion to be found that would relate to moving a cursor via it; ii) concerning foot controller, something called a "Bildschirmcursor" may be shown in connection of using it, but iii) even this cursor seemingly is not such what is typically understood by this term in this type of context, i.e. some kind of an icon freely movable to any location on a

display. In contrast, US '926 seems to be referring to lamps/lights that may be on or off in dependence of the use of a foot controller.

As discussed above, touch screen is a control device on which symbols that are to be pressed are shown. One cannot fix a touch screen to such a location whereto the operator cannot see, as in that case one simply could not use it because of not being able to see the symbols to be pressed. The current invention, however, makes possible quite a free placing of the control device in a dental care environment as one does not have to be able to see the touch pad itself, just the location and movement of the cursor on a display as a response to using the touch pad.

Because of the above, restriction of claim 1 as suggested by the Examiner should not be required in view of the flaws and misinterpretations in the argumentation of the Office Action.